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ABSTRACT

The master plan in this document, drafted to improve the quality of education in California, is the result of (1) a survey of graduation requirements in the state and elsewhere in the nation and (2) public hearings. With the impetus of state legislation enacted in April 1983, the California State Board of Education has requested each district maintaining high schools to review, during the 1983-84 academic year, its present and planned graduation requirements, using the board's model as a yardstick, and to report to the board by June 1, 1984, the graduation requirements they have established or plan to establish. The board has also suggested that schools phase in the district-approved graduation requirements for students entering high school in fall 1984 and graduating in spring 1988. The model is presented in alphabetical order by subject area: computer studies, English, foreign language, mathematics, natural science, social sciences, and visual and performing arts. The course title and level, aims and objectives, and course content are provided for each course. Recommendations are made for the implementation of the model. The appendixes contain a history of the development of the model, descriptions of optional courses, acknowledgments, and a selected list of California State Department of Education publications. (MLF)

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ED239413

Raising Expectations

Model Graduation Requirements

Approved Unanimously by the
California State Board of Education
on June 10, 1983

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Raising Expectations was prepared by the Board-appointed Committee on Master Plan for Excellence in California Schools: Henry Alder, Chair, Wendy Allyn, Josie Gray Bain, and Ann Leavenworth, with C. Hugh Friedman serving as an ex officio member since January, 1983. The staff to the committee was Sandi Adams, Francie Alexander, and Ellis Bowman. For a list of the curriculum specialists and others who contributed to the development of this model, see the acknowledgments in Appendix C.

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Foreword

"Badness you can get easily, in quantity: the road is smooth, and it lies close by," the Greek poet Hesiod wrote in about 800 B.C. "But in front of excellence," he continued, "the immortal gods have put sweat, and long and steep is the way to it, and rough at first. But when you come to the top, then it is easy, even though it is hard."

I am certain the members of State Board of Education and all of you who worked so hard for over a year to produce these model graduation requirements agree with Hesiod. I am equally certain you must be very pleased with the results. I congratulate you, and on behalf of the people of California, I say "thank you" for taking a positive step in helping restore excellence to our public schools. Of course, as the Greek poet reminded us, even when we get to the top, it will not be easy to stay there. Yet, I know we cannot afford to remain where we are—to let the educational foundations of our society continue to be eroded, as the National Commission on Excellence in Education said, "by a rising tide of mediocrity that threatens our very future as a nation and a people."

I believe we are on the right road with these model graduation requirements and with our other reform efforts. And I believe the people of this state intend for us to continue to rebuild our educational foundations with the proven elements of "school effectiveness."

Soon after I took office, I asked 27 task force members—on the basis of their experiences as educators or school board members—to identify for us which elements are found most often in effective schools. The task force identified 11 major "school effectiveness" factors, almost all of which can be related to the Board's model graduation requirements:

1. **Academic focus.** The primary goals of effective schools are academic ones that focus on student learning and achievement.
2. **Rigorous content.** Students are exposed to a broad-based academic curriculum, including reading, language, mathematics, science, physical education/health, social studies, and fine arts.

3. **Safe and orderly environment.** The learning environments in effective schools are safe and free of disruption.
4. **Coordinated curriculum.** Classroom learning is related directly to clearly dilineated objectives for all students in all subject areas.
5. **Maximum use of time.** Clearly established allocations of time are reserved for each of the basic subjects.
6. **Regular homework.** Homework in effective schools is structured and based on the core objectives of the curriculum.
7. **Teacher-directed instruction.** Teachers take the primary responsibility for instruction, including the introduction of new concepts and skills and the monitoring of student learning.
8. **Variety of teaching strategies.** Teachers in effective schools are able to adapt teaching strategies to fit the diagnosed needs of their students.
9. **High standards and expectations.** The academic standards in effective schools are predicated on the belief that all students can learn. High expectations are evident both in the policies and practices of the school and in the behavior of students and teachers.
10. **Regular assessment.** Broad-based and regularly used assessment procedures are focused on the outcomes of student learning. Assessment results are used to guide instruction, assess the curriculum, develop school goals, and plan for professional growth activities.
11. **Instructional leadership.** Instructional leaders in effective schools have the vision to know where to take a school and the ability to get the resources to move to that goal.

In addition to identifying the major factors that it believes are found most often in effective schools, the task force identified five other supporting factors: (1) opportunities for student responsibility and involvement; (2) structured staff development; (3) widespread recognition; (4) home-school cooperation and support; and (5) a sense of community. The task force also found that "high expectations can be regarded as a press for excellence in everything that staff and students undertake."

The road to excellence, as the Greek poet Hesiod said, is long and steep and rough, but to travel on any other road seems senseless to me. Therefore, I hope you will work with me to make all of California's schools the most effective institutions of learning in the world. Let us begin by supporting both the spirit and the intent of *Raising Expectations: Model Graduation Requirements.*

Bill Honig

Superintendent of Public Instruction

Preface

"Our nation is at risk," reports the National Commission on Excellence in Education. Then, in its report to the American people, the commission identifies the reasons. "Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world . . . the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and a people. What was unimaginable a generation ago has begun to occur—others are matching and surpassing our educational attainments."[1]

Just as the national commission points to the problems in education throughout the United States, the California State Board of Education recognizes the crisis in education facing this state. Today, many California students are enrolled in relatively few academic courses from grade seven upward, with the consequence that they complete only half as many academic courses as most of the students in the rest of the nation do. Although California's technology-based industries lead the nation in employing people trained in mathematics and science, many students in California complete high school with little or no work in these subjects.

High school graduation requirements were mandated by state law until 1969. Since that time the requirements have been established independently by the state's 382 school districts that maintain high schools. Over the intervening years local circumstances and financial inequities have resulted in the adoption of disparate standards in which it has been possible for students in one district to graduate with 190 units while students in another district needed as many as 265 units.

The urgent need for more uniform standards has been recognized by leading statewide educational organizations for some time. For

[1] *A Nation at Risk: The Imperative for Educational Reform.* Prepared by the National Commission on Excellence in Education. Washington: U.S. Department of Education, April, 1983, p. 5.

example, the Coalition for Intermediate and Secondary Education Improvement recommended, "The State Board of Education should coordinate the development of (1) model graduation requirements, and (2) curriculum standards, set forth in specific competencies, and provide these to local school boards in 1983."[2] Accordingly, the State Board determined in the fall of 1982 to establish model high school graduation requirements as a matter of first importance in improving the quality of education in the state. The Board formed its Committee on Master Plan for Excellence in California Schools (Master Plan Committee) to oversee the development of the model.

In carrying out its charge from the Board, the Master Plan Committee surveyed current graduation requirements throughout California and elsewhere in the nation; and with assistance from the Curriculum Development and Supplemental Materials Commission, it disseminated in December, 1982, a preliminary draft of a model of suggested standards for comment and recommendations and held public hearings throughout the state. At these public hearings the Master Plan Committee received valuable suggestions from teachers, administrators, professional organizations, parents, and many others. All of the material from the hearings was carefully considered in formulating the final model, which was unanimously approved by the Board on June 10, 1983.[3]

The Board is gratified by the widespread support its model has received, and it is very pleased that some districts already have adopted the model graduation requirements.

Through state legislation (ACR 14) enacted on April 8, 1983, the State Board was urged to require each school district governing board to compare its existing graduation requirements and curriculum standards with the model standards developed by the State Board of Education and the Superintendent of Public Instruction. Accordingly, the Board has requested each district maintaining high schools to review, during the 1983-84 academic year, its present and planned graduation requirements and to use the Board's model as a yardstick. The districts have been requested to report to the Board by June 1, 1984, the graduation requirements which they have established or plan to establish. The Board has also suggested that schools phase in the district-approved graduation requirements for students entering high school in the fall of 1984 and graduating in the spring of 1988.

The Board recognizes that a six-period or seven-period day may be necessary in many schools to implement the model and still provide for a program that allows for a number of electives. It is also aware that other current conditions may present difficulties in the

[2]*Reports: Coalition for Intermediate and Secondary Education Improvement.* Los Angeles: Coalition for Intermediate and Secondary Education Improvement, September, 1982, p. 1.

[3]See Appendix A for the chronology in the development of the model.

implementation of the model, such as the shortage of funds and teachers. The Board remains committed to continue to seek solutions to these problems. However, the Board believes the first step must be to set forth a state goal for quality education for all students. The statement of the goal provides the rationale to address more effectively these other pressing needs.

By adopting model graduation requirements, the Board challenges local school districts to raise their sights and to recognize what is necessary to achieve excellence in education. If they meet the Board's challenge, local districts will be involved in the development of their own high school graduation requirements, and local communities will participate in the comparison of local standards to those of the model. Only such participation can result in the necessary commitment for effective reform.

The Board, along with the National Commission on Excellence in Education, does "... not believe that a public commitment to excellence and educational reform must be made at the expense of a strong public commitment to the equitable treatment of our diverse population. The twin goals of equity and high-quality schooling have profound and practical meaning for our economy and society, and we cannot permit one to yield to the other in principle or in practice. To do so would deny young people their chance to learn and live according to their aspirations and abilities."[4]

The national commission, in its report, cautions that "History is not kind to idlers."[5] We must act decisively, and we must act now. The consequences of deferred action in terms of costs to our state and the lives of our youth are unacceptable. As the Commission so aptly concludes, "It is their America, and the America of all of us, that is at risk; it is to each of us that this imperative is addressed. It is by our willingness to take up the challenge, and our resolve to see it through, that America's place in the world will be either secured or forfeited. Americans have succeeded before and so we shall again."[6] It is in this spirit that the State Board of Education submits its model high school graduation requirements to the people of California.

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[4] *A Nation at Risk*, p. 13.

[5] Ibid., p. 6.

[6] Ibid., p. 36.

THE CALIFORNIA STATE BOARD OF EDUCATION
Henry Alder, Wendy Allyn, Josie Gray Bain, Sandee Boese, Lorenza Calvillo-Craig, Agnes Chan, Daniel M. Chernow, C. Hugh Friedman, Ann Leavenworth, Angie Papadakis, and David T. Romero

To the students, present and future,
of California schools

Introduction

The State Board's Model Graduation Requirements

The model, as presented on the next page and as approved by the State Board of Education, is designed to be consistent with the charge of the Subcommittee on Student Standards of the Coalition for Intermediate and Secondary Education Improvement: "... all students in California have the right to receive—and the responsibility to seek—a challenging educational experience in an intermediate and secondary school that will prepare them, upon graduation, to undertake college-level studies, to perform meaningful work in the marketplace, or both."[1] To this, the Board has added as an essential objective the enhancement of the preparation of all students to take their places in our free society as informed and participating citizens.

[1] *Reports of the Coalition*, p. 1

The Board's model for high school graduation requirements, shown below, is presented in alphabetical order by subject area. The content of the courses is outlined on the pages that follow.

The model is to be considered as an addition to state-mandated requirements; for example, two years of physical education. In addition, the model does not include health education, which the Board expects schools to have in their curricula in ways most appropriate to their local circumstances.

The State Board of Education is strongly committed to the comprehensive high school, which was so clearly defined in the 1950s by James B. Conant.[2] Basic to the ideal of a comprehensive

Model Graduation Requirements

Subject area	Requirement	
Computer Studies		1 semester
English		4 years
Foreign Language		2 years (in the same language)
Mathematics		3 years
Algebra I	1 year (at least)	
Geometry	1 year	
District Option	1 year	
Natural Sciences		2 years
Science I (Physical-Earth)	1 year	
Science II (Life)	1 year	
Social Sciences		3 years
World Civilizations: History, Geography, and Culture	1 year	
The United States: Ideals, Institutions, and Traditions	1 year	
Individual Rights and Civic Responsibilities		
I Political, Legal, and Ethical Perspectives	1 semester	
II Economics	1 semester	
Visual and Performing Arts		1 year

[2]James B. Conant, *American High School Today*. New York: McGraw-Hill Book Co., 1959.

high school is the strong academic preparation of all students. Only with such preparation can students be successful in vocational and career programs. Therefore, the Board strongly recommends the following for the implementation of its model:

- To provide maximum flexibility for students to satisfy the model graduation requirements and to select from electives offered in the comprehensive high school, school districts should, whenever possible, permit students to take, prior to grade nine, computer studies and Science 1 (Physical-Earth) and some of the courses in foreign language, mathematics, and visual and performing arts. Such courses, if accepted by the high school as equivalent to the corresponding high school courses, can be used to satisfy high school requirements. The materials of some of these courses—in particular, foreign language—are frequently easier for a younger student to master and also serve as excellent background for some high school courses.
- The requirements of this model are intended to be met by all students; for students with exceptional needs, the model will provide a goal in the development of the individual education plan (IEP) appropriate to the needs of each student.
- The Board encourages alternative schools and programs to provide for all students, through a variety of methods, optional approaches to achieve this single goal.
- Additional flexibility should be provided for students who are able to demonstrate proficiency in some of the required courses by passing special examinations, which should be available for most of the required courses.
- While vocational education is not included in the model, the Board considers vocational education programs an essential part of the comprehensive high school program, and the Board expects that vocational education electives will be chosen by the many students who seek technical and entry-level employment skills.

The curriculum proposed in this model is designed to be consistent with the state curriculum frameworks; the *Statement on Competencies in English and Mathematics Expected of Entering Freshmen*, which was developed by the academic senates of the three public segments of higher education in California;[3] and other curricular recommendations.

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[3]*Statement on Competencies in English and Mathematics Expected of Entering Freshmen.* Prepared by the academic senates of the California Community Colleges, the California State University, and the University of California. Sacramento: The California Round Table on Educational Opportunity, 1982. (Copies of the document are available for $2.50, plus tax for California residents, from Publications Sales, California State Department of Education, P.O. Box 271, Sacramento, CA 95802.)

Essential components of the Board's model are descriptions or outlines of the required courses because the board is concerned not only about what courses should be required but also about the nature and quality of such courses. The Board, therefore, considers the course outlines given on the following pages at least equal in importance to the numbers of semesters or years which should be devoted to each of the subjects; the Board attaches great importance to having students acquire the needed competencies and skills in contrast to having them complete certain amounts of seat time. Therefore, the course outlines are to be considered an integral part of the Board's model. Options are included for some subject areas to allow flexibility.

Computer Studies

1 Semester

One semester of computer studies will give students the necessary background to understand the implications of the computer in their lives. Students with this background will be in a better position to understand the computer (as an information and computation and computer tool), to use the computer in the study of other subjects, and to employ the computer for personal and work-related purposes. Students who have taken computer studies will be able to participate in the emerging technological society.

Course Title and Level	**Computer Studies, Secondary** *Department:* Appropriate department(s) *Length of Course:* One semester *Available to Students:* Grades nine through twelve *Required or Elective:* Required unless the student, prior to entering high school, passed a course that the high school has certified as equivalent to its computer studies course; or required unless the student has demonstrated proficiency in computer studies by passing an appropriate test *Prerequisites:* None
Aims and Objectives	The purpose of studying computers is to learn the fundamental concepts that enable the student to begin using the computer for applications in and out of school, to recognize the technological advances that produced the modern day computer, to learn about the variety of computer applications, to recognize the value of the computer in problem solving, to know the career opportunities in computer technology, and to communicate with the computer through computer programming language. Technology is rapidly changing; consequently, this course needs to be flexible enough so that it can be adjusted to new developments. The long-term goal is for much of the subject matter of this course to be absorbed by many other areas of the curriculum since the applications of computers in a wide variety of courses will become increasingly important; for example, the use of word processing in English and history classes, calculations in science courses, and data processing in business courses. Increasingly, students will learn many computer use and programming skills prior to entering high

school. As the technology becomes increasingly user friendly, the most important skill will be how to think and solve problems by using a computer as a tool.

Aims of the Computer Studies Course

The aims of the computer studies course are:

- To emphasize the skills and processes that promote students' abilities to understand computers and related technologies
- To recognize the implications of being part of a rapidly changing information society
- To appreciate the power of the computer and related technologies and to understand the applications of computers in personal and work situations

Objectives of the Computer Studies Course

The student will demonstrate an understanding of:

1. Major technological developments leading to the development of the computer
2. Components of a computer and the function of each
3. Computer use and typical computer tasks
4. Ethical issues in computer technology
5. Various types of computer languages and their major differences
6. Building blocks of computer programs and their uses
7. Simple programs
8. Problem solving by breaking the problem down into major components, relating the components in a solution strategy, structuring the computer program according to the strategy, and filling in the detailed instructions
9. Application programs in a variety of areas

Course Content	A. Background on Computers 1. Brief history of computer technology 2. Components of a computer a. Input devices b. Output devices c. Permanent and temporary memory d. Central processing units e. Hardware and software 3. Specialized language used with computers; e.g., byte, disk, drive, load, and program B. Selected Examples of Tasks Computers Can Perform 1. High speed calculations 2. Graphics 3. Data manipulations 4. Telecommunications 5. Word processing C. Communicating with the Computer 1. Awareness of the different roles played by system software, language software, and applications software 2. Awareness of communications at the machine level using binary code 3. Awareness of different high level languages, such as BASIC, LOGO, PASCAL, and COBOL D. Start-Up Computer Skills 1. Using the keyboard 2. Loading, saving, and running the program 3. Entering, listing, and editing programs E. Introduction to a Programming Language 1. Commands 2. Computer program 3. Building blocks of a computer program a. Actions b. Subroutines c. Loops

	d. Branches e. Data, variables, and arrays 4. Debugging 5. Reading, analyzing, and writing simple computer programs F. Solving Problems with Computers 1. Programs as solution procedures a. Describing the solution as output b. Describing the user interaction c. Breaking down the problem into major components d. Developing a solution strategy and structuring the program 2. Using application programs a. Word processing b. Graphics c. Spread sheet d. Data base G. Awareness of the Role That Computers Play in Our Lives 1. Educational uses 2. Business and government uses 3. Medical uses 4. Scientific uses 5. Recreational uses 6. Design applications 7. Uses in the future 8. Career opportunities H. Awareness of Ethical Issues in Computer Technology 1. Concerns about the invasion of privacy 2. Computer-related crimes 3. Copyright infringement 4. Computerizing inappropriate applications 5. Equal access to computers

English
4 Years

Four years of high school English are required if students are to demonstrate competence in the use of their language. Such competence includes skills in listening and speaking, academic research, higher order reading comprehension, language usage and writing, literary analysis, and critical thinking.

English, as the written word, forms the basis of nearly all academic disciplines. The ability to read, analyze, and draw conclusions from written language is necessary for students to succeed in their study of English, science, social studies, higher mathematics, and other subjects. In the communications age, written and oral language assume stature in the transmission of new ideas and new technologies beyond their traditional scope, and this strengthens the case for yearly coursework in English during high school.

The study of English is enhanced by an in-depth focus on literature. It is through the study of literature that students come to know the power of language in conveying philosophies, values, emotions, and truths about the human condition. Moreover, they become acquainted with an art form which enriches their lives both during their school years and beyond.

Course Title and Level	English I, Secondary *Department:* English *Length of Course:* One year *Available to Students:* Grades nine through twelve *Required or Elective:* Required *Prerequisites:* Eighth grade English or equivalent. Two consecutive semesters of advanced English as a second language (ESL) may be substituted for two semesters of regular English. Advanced ESL courses are distinguished from beginning and intermediate level courses by their emphasis on reading and writing comparable to that given in regular courses, except for differences in the instructional methods and materials.
Aims and Objectives	At the beginning level of high school English study, students in English I develop skills in speaking and listening, academic research, higher order reading comprehension, language usage and writing, literary analysis, and critical thinking. The difference between English I and more advanced courses lies in the length, complexity, and the range of source materials for assignments to address the skill areas and in the level of difficulty of the literature studied. In English I students build the foundation they will need for mastering all the skill areas by the time they complete English IV.
Aims of the English I Course	The aims of the English I course are: • To emphasize effective individual and group listening skills • To develop various oral language skills to ensure purposeful communication to a specific audience • To stress academic research skills • To develop in students higher order reading comprehension skills

- To encourage development of language competence in English usage and in writing essays, reports, and creative pieces
- To instill in students an appreciation of our literary heritage and a familiarity with works of literature
- To help students develop the ability to assess various forms of information and to evaluate them critically

Objectives of the English I Course

The objectives of the English I course are for students to:

1. Develop individual and group listening skills as a result of experiences with competent users of the language, and transfer the information gained in such experiences to an oral or written form.
2. Master various oral skills to convey competently and effectively information, as determined by audience and purpose.
3. Master research skills necessary to generate oral and/or written reports, including use and synthesis of source material.
4. Demonstrate higher order comprehension skills, including identifying main idea, summarizing, drawing conclusions, making inferences, and drawing analogies.
5. Write pieces for different situations, observing the conventions of writing; also, choose a point of view, support it in writing, compare it to the views of others, and respond as to the validity of those views.
6. Distinguish literary from nonliterary works, applying the principles which make that distinction; also, read selected literary works and determine how they contribute to our literary heritage.

	7. Critically analyze written work and oral presentations to draw purposeful interpretations and conclusions.
Course Content for Listening	A. Listening Skills 1. Skills that are generic to the listening process and build in students facility in language use: a. Listening critically and constructively to an exchange of ideas b. Identifying and summarizing main and subordinate ideas developed through lectures, dicussions, and oral readings c. Determining a speaker's point of view and rationale for argument presented and explaining the use of persuasive devices d. Conceiving and developing ideas from speakers for the purpose of relating information e. Following verbal instructions and making suggested changes to improve the instructions 2. Suggested activities for demonstrating listening skills: a. Listing ideas and opinions presented in a video-tape recording of a speech or class discussion b. Responding to the oral evaluation of an individual endeavor by suggesting alternatives c. Identifying loaded words as persuasive devices in debates or television commercials d. Citing examples of body language after viewing a speech e. Paraphrasing a discussion, debate, or speech

	f. Identifying empathetic, apathetic, antagonistic, irrelevant, and egotistic responses to a speaker
Course Content for Oral Language Skills	B. Oral Language Skills 1. Oral language skills that are generic to the speaking process and build in students a facility to communicate ideas effectively: a. Engaging critically and constructively in the exchange of ideas; paraphrasing a detailed discussion b. Answering and asking questions coherently and concisely, with justification of views in response to higher order questioning of others c. Presenting ideas in standard English d. Reporting accurately information gleaned from written and oral sources e. Tailoring an oral presentation to a specific audience for a specific purpose f. Presenting a point of view with research-based rationale, supporting materials, and rebuttal statements when necessary g. Interpreting literature orally during the reading of selected pieces h. Employing effective delivery techniques i. Organizing individual reports and speeches 2. Suggested activities for demonstrating oral language skills: a. Participating in class discussions, including brainstorming for writing assignments b. Preparing for and participating in interviews

	c. Preparing and delivering formal speeches (1) Expository (2) Impromptu (3) Persuasion/argument (4) Narrative d. Preparing for and participating in formal *debate* e. Reciting orally (1) Readings from author's work (2) Memorization (3) Presentation of plays (4) Student papers f. Preparing and delivering research-based oral reports g. Preparing for and participating in forums on researched topics h. Preparing for and participating in panel discussions (1) Analysis of literature; e.g., point of view, motivation, theme, use and level of language, style (2) Analysis of media
Course Content for Academic Research	C. Academic Research Skills 1. Skills that are generic to the development of research skills and build in students facility to gather information, cite resources, and present a cohesive argument orally or in writing: a. Differentiating between primary and secondary source materials b. Gathering information through systematic note-taking c. Employing various library materials and media resources d. Applying acceptable format for research paper, including title page, contents, footnotes, margins, bibliography

	e. Narrowing a topic f. Analyzing information gathered to develop a specific topic g. Distinguishing beween plagiarism and documentation 2. Suggested activities for demonstrating skills in academic research: a. Taking part in panel discussions b. Preparing for and taking part in a formal debate c. Preparing a research paper on a defined topic
Course Content for Reading	D. Reading Skills 1. Skills that are generic to the reading process and build in students the facility to gather, understand, and evaluate information: a. Recognizing different purposes and methods of writing; identifying a writer's point of view and tone; and interpreting a writer's meaning inferentially as well as literally b. Separating one's personal opinions and assumptions from a writer's c. Varying one's reading speed and methods (survey, skim, review, question, and master) according to the type of material and one's purpose for reading d. Using the features of books and other reference materials, such as a table of contents, preface, introduction, titles and subtitles, index, glossary, appendix, and bibliography e. Defining unfamiliar words by decoding, using contextual clues, or by using a dictionary

2. Suggested activities for demonstrating higher order reading comprehension skills:
   a. Identifying and comprehending the main and subordinate ideas in a written work and summarizing the ideas in one's own words
   b. Drawing conclusions based on a written passage or excerpt from a longer piece of writing
   c. Making inferences as to meaning, motive, or underlying philosophy in both fiction and nonfiction
   d. Drawing analogies based on reading from several sources or from a single source and real life event

Course Content for Writing

E. Writing Skills

1. Skills that are generic to the writing process and build in students facility in language use:
   a. Generating ideas about which to write
   b. Formulating a single statement that clearly expresses the central idea of one's essay
   c. Constructing a paragraph that develops and supports the paragraph's main idea with examples or reasons
   d. Organizing paragraphs in a sequence that reflects their logical relationship to one another and which together support the central idea of the essay
   e. Constructing varied sentence types (simple, complex, compound) and structures (subordinate, coordinate, parallel) that indicate the relationships and the importance of the ideas
   f. Writing sentences with precise and appropriate words (diction), distinguishing

between literal and figurative uses of language, and avoiding ineffective jargon or cliche

g. Varying one's vocabulary and sentences for different audiences and purposes

h. Presenting one's own ideas as related to, but clearly distinguished from, the ideas of others, and having the ability to distinguish between plagiarism and documentation

i. Supporting one's opinions or conclusions, including the appropriate use of evidence

j. Using a dictionary

k. Using a library

l. Editing one's essay for errors and omissions of both form and substance; revising and restructuring where ideas are poorly organized or where evidence is lacking; correcting the draft for errors in capitalization, spelling, and punctuation; and producing a finished paper relatively free of sentence fragments, comma splices, errors in agreement, and faulty pronoun references

2. Suggested activities in which students demonstrate an understanding of both style in writing and the principles which underlie effective writing:

a. Expressing and supporting a point of view in writing; offering and responding to the points of view of others as well

b. Preparing a written account for different situations:

(1) Relating an event or experience objectively as it occurred, such as would be required of a witness

(2) Relating an event or experience as it affected feelings or emotions, offering an

interpretation of the effect of the event on those involved

(3) Comparing and contrasting two or more events or experiences from both personal and objective perspectives

c. Summarizing a piece of writing, capturing and demonstrating comprehension of the salient points

d. Demonstrating facility in expository, narrative, and descriptive writing

e. Demonstrating variety in use of language structure, idiom, and vocabulary, as appropriate to writing for different audiences and purposes

f. Framing and composing both a business letter and a friendly letter

g. Demonstrating an understanding and application of the principles of effective writing:

(1) Economy of language versus redundancy, ostentation, or inflation
(2) Simplicity of language
(3) Cumulative sentences and structure
(4) Good diction
(5) Coherence and unity
(6) Nuance to express shades of meaning
(7) Evolving language versus repetitive vocabulary
(8) Use of imagery and figurative language

h. Composing a variety of creative writing pieces, including short stories, drama, and poetry (For poetry, writing exercises should include traditional poetic forms: ballad, sonnet [both Alexandrian and Shakespearean], blank verse, free verse, and narrative poetry, with knowledge and application of versification, imagery, and accent.)

Course Content for Literature	F. Literature 1. Skills that are generic to the critical analysis of literature: a. Identifying literary genre, such as novel, essay, short story, drama and poetry, and examples of each genre b. Distinguishing literary works from nonliterary reading, and the principles by which such distinction is made: (1) Literature in all forms; e.g., realism, fantasy, mythology, as reflecting human emotions and behaviors in believable ways (2) Insights afforded through representation of these behaviors as increasing understanding of self, others, and the human condition in general c. Reading selected works and determining why, in relation to lesser works, they became part of our literary heritage d. Identifying from selected literary works—e.g., novels, short stories, and plays—examples of the elements of fiction: point of view, setting, plot, characterization, and theme; also, how knowledge of these elements enhances understanding of fiction 2. Suggested activities in which students demonstrate an in-depth knowledge of literature: a. Relating the insights of literature to one's own experiences and understanding of the world and human nature; delineating how particular literary works enhance one's understanding of these and other dimensions of life

b. Comparing literary works; determining those works that are superior in increasing the reader's understanding of the world and human nature
c. Selecting, memorizing, and presenting passages, lines, and poetry that express thoughts or feelings the student has been unable to express previously or as powerfully
d. Understanding and appreciating how writers, through literary works, use devices such as beat, rhythm, mood, tone, and diction for adding power, nuance, and emotion to their writing
e. Comparing the individual styles of selected authors in terms of the use of language; e.g., precision of use, degree of description and imagery, dialogue or narrative to convey theme and content
f. Identifying through a study of literature the contributions of various ethnic groups to our pluralistic society and to our literary heritage

Course Content for Critical Thinking Skills

G. Critical Thinking Skills

1. Skills that are generic to the critical thinking process and build in students the facility to act on well-conceived conclusions:
   a. Evaluating various pieces of literature
   b. Analyzing individual arguments for point of view and audience
   c. Employing inductive and deductive reasoning skills
   d. Employing connotative and denotative vocabulary skills
   e. Choosing and organizing related ideas

	2. Suggested activities in which students develop the capability of analyzing literature and applying what they learn to specific situations: a. Comparing and contrasting specific arguments through an analysis of point of view and audience to draw accurate conclusions b. Analyzing a specific piece of literature in relation to its components; e.g., exposition, conflict, climax, resolution c. Analyzing a specific piece of literature and comparing and contrasting a variety of literary pieces as to thematic development d. Analyzing a specific piece of literature as to its character development e. Evaluating specific poems or literary selections in light of their tone, style, imagery, mood, use and level of language, and historical implications f. Applying an author's conclusions to specific situations
Course Title and Level	English II, Secondary *Department:* English *Length of Course:* One year *Available to Students:* Grades ten through twelve *Required or Elective:* Required *Prerequisite:* English I (pass)
Aims, Objectives, and Course Content	English II continues to provide instruction in the major skill areas: speaking and listening, academic research, higher order reading comprehension, language usage and writing, literary analysis, and

	critical thinking. Emphasis is placed on higher levels of student performance, with more complex assignments and materials than those used in English I. For example, students will develop the speaking skills needed in panel discussions; write essays of greater length, and use more precise language and more sophisticated topics than they did in English I; do research of a more in-depth nature, using a broader range of sources and an original hypothesis; and read and analyze literature of higher levels of difficulty in terms of language use and thematic content.
Course Title and Level	English III, Secondary *Department:* English *Length of Course:* One semester *Available to Students:* Grades eleven and twelve *Required or Elective:* Required *Prerequisites:* English I, II (pass)
Aims, Objectives, and Course Content	The purpose of English III is to continue to provide students with those experiences that will enable them to develop the skills they must have to express their ideas in writing or orally in clear, concise, and comprehensive ways. Students will focus on formal debate to develop speaking skills; in writing, they will focus on the critical analysis of literary selections. Students will learn to use primary sources for research papers, including a term paper, and to broaden the scope of the topics they select. Through their study of literature, students will also develop a knowledge of, and an appreciation for, American traditions.

English/Course Description

Course Title and Level	English IV, Secondary *Department:* English *Length of Course:* One semester *Available to Students:* Grades eleven and twelve *Required or Elective:* Required *Prerequisites:* English I, II, III (pass)
Aims, Objectives, and Course Content	The purpose of English IV is for students to achieve mastery of the skills related to listening and speaking, academic research, higher order reading comprehension, language usage and writing, literary analysis, and critical thinking. Students will develop the listening and speaking skills they must have to prepare for, and participate in, a forum. In writing, they will learn to develop position papers and use a variety of creative writing modes, particularly the more complex, such as writing essays based on models of the seventeenth through twentieth centuries and composing sonnets. Students will study classical literature to complete the literature component.
Course Title and Level	Elective, Secondary *Department:* English *Length of Course:* Two semesters (Two of these one-semester courses would be needed to complete the four-year requirement.) *Available to Students:* Grades eleven and twelve *Required or Elective:* Required (but can be selected from several options) *Prerequisites:* English I, II (pass)

Aims and Objectives	In order to fulfill the four-year requirement, students need to choose electives of their interest (choice). Individual course objectives, outlines, and methods of instruction would be developed by individual high schools, but it would be understood that the quality of these courses would match that of the other courses outlined in this master plan. Each course should include extensive writing, speaking, and reading experiences. These courses could include but need not be limited to: Advanced Placement Composition and Literature (to be given credits from colleges and/or universities) American Literature (including ethnic literature) Drama (as literature) English Literature Journalism Mythology Shakespeare Speech I, II Survey of Twentieth Century Literature Survey of World Literature
Course Content	The course content may be developed at the local level.

Foreign Language
2 Years

The increasing interdependence among nations and the rich linguistic and cultural diversity of our own country and state make it essential that high school students develop proficiency in languages other than English and gain an understanding of other cultures. Two years is the minimum amount of time needed for a student to acquire a sound basis for further study and conversational second-language facility.

Proficiency in languages other than English is an asset, both for securing employment and functioning effectively on the job. In addition, foreign language study provides a student with insights into the structure, history, and vocabulary of one's own language.

Course Title and Level

Foreign Language I, Secondary

Department: Foreign Language
Length of Course: One year
Available to Students: Grades nine through twelve
Required or Elective: Required unless the student, prior to entering high school, passed a course that the high school has certified as equivalent to its foreign language course; or required unless the student has demonstrated proficiency in foreign language by passing an appropriate test
Prerequisites: None

Aims and Objectives

The purpose of the course is to enable the student to communicate in a language other than English (which may be the student's primary language), to acquire knowledge of another culture, and to develop the ability to interact positively with members of that culture.

Aims of the Foreign Language Course

The aims of the Foreign Language I course are:

- To emphasize conversational skills
- To recognize the importance of foreign language proficiency to commerce, foreign affairs, education, and other critical areas
- To help students gain a better understanding of and appreciation for their own language
- To develop an appreciation for non-English-speaking cultures

Objectives of the Foreign Language Course

The student will demonstrate an understanding of:

1. The language, as spoken by a native speaker
2. Nonverbal communication used by native speakers
3. The written language

	In addition the student will be able to: 1. Converse in the language studied. 2. Express himself or herself in writing in the foreign language. 3. Recognize and appreciate similarities and differences among cultures.
Course Content	A. Phonology (study of the sounds of a new language) 1. Alphabet and different sounds of language 2. Words and sentence patterns B. Morphology 1. Basic verbs and endings 2. Masculine and feminine forms 3. Nouns and noun markers: articles, adjectives, possessive markers 4. Interrogatives 5. Adverbs C. Syntax 1. Declarative statements 2. Interrogative statements 3. Indirect discourse D. Skills to Be Developed 1. Listening a. Phonemic discrimination b. Physical, nonverbal response to aural stimulus 2. Speaking a. Responding orally b. Initiating conversation (1) Questions (2) Comments (3) Answers

	E. Cultural Applications 1. Social interactions; e.g., greetings and farewells 2. Social customs, holidays, celebrations 3. Food 4. Clothing 5. History 6. Creative activities; e.g., art, dance, drama/theatre, music, and activities associated with television, radio, and film 7. Geography 8. Gestures, voice intonations 9. Sports 10. Ethnic experiences in the United States
Course Title and Level	**Foreign Language II, Secondary** ***Department:*** Foreign Language ***Length of Course:*** One year ***Available to Students:*** Grades nine through twelve ***Required or Elective:*** Required unless the student, prior to entering high school, passed a course that the high school has certified as equivalent to its foreign language course; or required unless the student has demonstrated proficiency in foreign language by passing an appropriate test ***Prerequisite:*** Foreign Language I (same language) Pass or equivalent
Aims and Objectives	The purpose of the course is to enable the student to communicate in a language other than English (which may be the student's primary language), to acquire knowledge of another culture, and to develop the ability to interact positively with members of that culture.

Foreign Language/Course Description

Aims of the Foreign Language Course	The aims of the Foreign Language II course are: • To emphasize conversational skills • To recognize the importance of foreign language proficiency to commerce, foreign affairs, education, and other critical areas • To help students gain a better understanding of and appreciation for their own language • To develop an appreciation for non-English-speaking cultures
Objectives of the Foreign Language Course	The student will demonstrate an understanding of: 1. The language, as spoken by a native speaker 2. Nonverbal communication used by native speakers 3. The written language In addition the student will be able to: 1. Converse in the language studied. 2. Express himself or herself in writing in the foreign language. 3. Recognize and appreciate similarities and differences among cultures.
Course Content	Basically, the course outline would be the same as Foreign Language I, with continuing emphasis on spoken and conversational language and a study of the cultural aspects of the countries in which the language is used. More writing would be emphasized that could include longer dictations, stories, letters, dialogues, or skits.

Mathematics

3 Years

Three years of high school mathematics are required in order to provide students with the understanding and the skills they will need to participate fully in the technological world in which they will live and work. For example, an increasing percent of the work force is involved in retrieving, processing, and transmitting information; and students entering that work force need certain higher level thinking skills and "number sense" to function effectively. Algebra I, geometry, and other courses in mathematics can provide students with opportunities to develop the logical thinking skills they will need to solve the problems encountered not only in their chosen careers but also in their everyday lives.

Students should select a three-year mathematics sequence that is appropriate to their needs. However, as indicated on the next page, all sequences must include the content of Algebra I and geometry. Students taking any of the courses in the sequence must have satisfied the prerequisites, which also appear on the next page.

Three-Year Mathematics Sequences[1]

1. Algebra I, Geometry, Algebra II
2. Algebra I (two-year course), Geometry
3. Pre-Algebra, Algebra I, Geometry
4. Algebra I, Consumer Mathematics, Geometry
5. Algebra I, Geometry, Consumer Mathematics
6. Algebra I, Geometry, Probability and Statistics, and one additional semester course

All students should be required to take a mathematics course in their senior year. For college-bound students this is essential to ease the transition from high school to college mathematics courses; for other students this is their last opportunity to receive formal mathematical instruction to prepare them for the increasingly technological demands of our society. The course to be taken in the senior year may be the third course in any of the above listed sequences, or it may be such additional courses as trigonometry, analytic geometry and mathematical analysis, or calculus.

Prerequisites for Entry into High School Mathematics Sequences

Students taking any sequence of courses in mathematics should be competent in the following basic arithmetic skills and concepts:

1. **Computations with whole numbers, fractions, decimals, and percent**
2. **Understanding the meaning of fractions, decimals, and percent and their relationship to one another**
3. **Translation of situations and verbal problems into mathematical statements**
4. **Facility in rounding, approximation, and numerical estimation; appreciation of reasonableness of numerical answers**
5. **Understanding and use of basic arithmetic properties**
6. **Use and interpretation of graphs and tables**
7. **Computation with positive integral exponents and square roots of perfect squares**
8. **Computation of perimeters, areas, and volumes of simple geometric figures**

[1]See Appendix B for descriptions of courses in pre-algebra, Algebra II, consumer mathematics, and probability and statistics.

Course Title and Level

Algebra I, Secondary

Department: Mathematics

Length of Course: One or two years

Available to Students: Grades nine through eleven

Required or Elective: Required unless the student, prior to entering high school, passed a course that the high school has certified as equivalent to its Algebra I course; or required unless the student has demonstrated proficiency in Algebra I by passing an appropriate test

Prerequisites: See "Prerequisites for Entry into High School Mathematics Sequences."

Aims and Objectives

The purpose of the study of algebra is to help students organize their thoughts to solve problems that they will encounter in everyday life and to prepare them to continue in their studies in mathematics and the sciences.

Aims of the Algebra I Course

The aims of the Algebra I course are:

- To emphasize algebraic concepts
- To recognize the applications of mathematics to science and other subjects
- To appreciate the importance of mathematics in solving everyday problems

Objectives of the Algebra I Course

The student will demonstrate an understanding of:

1. Previous coursework in mathematics
2. Algebraic concepts
3. Problem-solving skills
4. Estimating and testing the accuracy of calculations
5. Applications of mathematical skills to "real world" situations

Course Content	A. Arithmetic Operations and Absolute Values of Positive and Negative Rational Numbers B. Arithmetic Operations with Literal Symbols C. Linear Equations and Their Graphs D. Inequalities E. Ratio, Proportion, and Variation F. Operations with Integer Exponents G. Operations with Polynomials and Rational Expressions H. Systems of Linear Equations with Two Unknowns; Solutions and Applications I. Special Products and Factoring J. Solution of Quadratic Equations by Factoring and Formula K. Solution of Elementary Word Problems L. Application of Formulas for Perimeters, Areas, and Volumes of Simple Geometric Figures
Course Title and Level	Geometry, Secondary *Department:* Mathematics *Length of Course:* One year *Available to Students:* Grades nine through twelve *Required or Elective:* Required *Prerequisite:* Algebra I (pass)
Aims and Objectives	The purpose of geometry is to present patterns which are important to the development of thinking skills and problem-solving skills. The student will be able to work with the body of geometric theorems, including geometry of two and three dimensions. The student will be introduced to analytic geometry and transformational geometry.

Aims of the Geometry Course

The aims of the geometry course are:

- To emphasize geometric concepts
- To recognize the applications of geometry to science and other subjects
- To appreciate the importance of mathematics in solving everyday problems

Objectives of the Geometry Course

The student will be able to demonstrate an understanding of:

1. Previous coursework in mathematics
2. Geometric concepts
3. Problem-solving skills
4. Estimating and testing the accuracy of calculations
5. Applications of mathematical skills to "real world" situations

Course Content

A. Extensive Reinforcement of the Algebraic Skills Developed in Algebra I

B. Basic Postulates of Euclidean Geometry; Proofs of Geometric Theorems

C. Angles, Parallel Lines, Congruent and Similar Triangles, Rectilinear Figures, Circles and Arcs, Pythagorean Theorem

D. Application of Formulas for Perimeters, Areas, Volumes, and Surface Areas of Geometric Figures

E. Geometric Constructions; Loci

F. Coordinate Geometry; Proofs of Geometric Theorems by Coordinate Geometry Methods

G. Right Triangle Trigonometry

H. Solution of Elementary Word Problems

I. Intuitive Spatial Geometry

Natural Sciences

2 Years

A balanced core of two years of science for all students consists of one year of physical and earth science and one year of life science taught in a science-technology-society context. The study of science will help students develop positive attitudes and values and gain an appreciation for their environment, will encourage logical and creative thinking, will foster a rational understanding of themselves and their surroundings, and will enable students in everyday life to make decisions that are increasingly dependent on some scientific knowledge.

Course Title and Level

Science I—Physical and Earth, Secondary

Department: Science
Length of Course: One year
Available to Students: Grades nine and ten
Required or Elective: Required
Prerequisites: Science in grades seven and eight, or equivalent

Aims and Objectives

The purpose of Science I—Physical and Earth is to offer students a course that helps them develop scientific concepts, skills, and attitudes and helps them gain an understanding of the processes in physical and earth sciences. The course continues to help students develop the cognitive, affective, and psychomotor skills in physical-earth sciences that they acquired in kindergarten through grade eight. There is an emphasis on knowledge in the physical sciences, and units of study are included in matter, energy, and kinetics. Knowledge in the earth sciences is also emphasized, with units of study given in space science-astronomy, geology and natural resources, and meteorology. The course encompasses basic physical science concepts and presents them in a relevant, practical manner that prepares students for the physical advances and challenges of the future. Special emphasis is given to the utilization of computers in physical and earth sciences.

Aims of the Science I Course

The aims of the physical and earth sciences course are:

- To understand the physical world, basic units of matter, and related energy and kinetics
- To emphasize the earth's development and position within the universe and its atmosphere, hydrosphere, and lithosphere

	• To recognize and appreciate the rapidly expanding scientific advances being made in new technologies, such as computers, information processing, and space science • To give students opportunities to develop values, aspirations, and attitudes that promote their personal involvement with the environment and society through land use planning and physical resource management
Objectives of the Science I Course	In this course students will demonstrate an understanding of: 1. Laboratory apparatus, tools, and materials and their safe use 2. Descriptive and quantitative information needed for making purposeful, objective observations of things and events 3. Sources of information 4. Ways of recording observations accurately and organizing data and ideas to enhance their usefulness 5. Communication with others (orally and in writing) in a manner that is consistent with knowledge of scientific conventions and that facilitates the learning of the listeners or readers 6. The International System of Units (SI) metric system 7. Appropriate mathematical concepts and skills in interpreting data and solving problems 8. Rational and creative thinking processes of observing, communicating, comparing, organizing, relating, and inferring; problem solving; and decision making 9. The relationship between science and society and the relationship of science to other areas of human endeavor; e.g., art, music, history, government, literature

	10. The importance of basic facts and information in making career and consumer choices 11. Contributions made by men and women of various races and nationalities and from different career areas 12. The importance and application of technology to everyday life
Course Content	A. Matter 1. States of matter, atomic structure 2. Physical and chemical properties 3. Physical and chemical changes 4. Elements, compounds, mixtures, solutions 5. Conservation of matter 6. Reactions: chemical B. Energy 1. Light 2. Sound 3. Heat 4. Mechanical 5. Chemical 6. Electrical, electromagnetic 7. Nuclear: fusion, fission 8. Conservation of energy 9. Need for new sources: solar, wind, geothermal, tidal C. Kinetics 1. Force, gravity 2. Work, motion 3. Power 4. Machines D. Space Science—Astronomy 1. Sun 2. Solar system 3. Space exploration 4. Milky Way Galaxy

	5. Universe 6. History of astronomy 7. Tools of astronomers 8. Applications to the physical world E. Geology and Natural Resources 1. Inorganic and nonrenewable resources, minerals and rocks 2. California energy resources 3. Rock cycle 4. Structural geology and plate tectonics 5. Land use and resource management 6. Geologic hazards F. Meteorology 1. Air: physical and chemical properties 2. Atmospheric pressure 3. Winds 4. Climate and weather
Course Title and Level	Science II—Life, Secondary *Department:* Science *Length of Course:* One year *Available to Students:* Grades nine through twelve *Required or Elective:* Required *Prerequisites:* Science I—Physical and Earth (pass) or an equivalent course in grade eight
Aims and Objectives	The purpose of Science II—Life is to offer students a course that helps them develop scientific concepts, skills, and attitudes and helps them gain an understanding of the processes in the life sciences. The course continues to help students develop the cognitive, affective, and psychomotor skills in life sciences that they acquired in kindergarten through grade eight. The course also builds on the skills students acquired in Science I—Physical and Earth. There is an emphasis on

knowledge in the life sciences, and units of study are included in living things (cells, genetics, evolution), plants, protists, animals, human beings, and ecosystems. The course encompasses basic life science concepts and presents them in a relevant, practical manner that gives students an understanding of the complexities of life on earth and their relationship to the physical world. Emphasis will also be given to applications and new advances in the life sciences.

Aims of the Science II Course

The aims of the life science course are:

- To understand the physical world, basic life forms, and related systems
- To emphasize the interdependence of living organisms within the universe and within the earth's atmosphere, hydrosphere, and lithosphere
- To recognize and appreciate the rapidly expanding technological and scientific advances being made in biological, chemical, and genetic research
- To give students opportunities to develop values, aspirations, and attitudes that promote their personal well-being through an understanding of themselves, other living organisms, and the importance of maintaining a balance in nature

Objectives of the Science II Course

In this science course students will demonstrate an understanding of:

1. Laboratory apparatus, tools, and materials and their safe use
2. Proper techniques for handling and caring for living organisms
3. Descriptive and quantitative information needed for developing or testing inferences and hypotheses by making purposeful, objective observations of things and events

	4. Sources of information 5. Ways of recording observations accurately and organizing data and ideas in ways that enhance their usefulness 6. Communication with others (orally and in writing) in a manner that is consistent with knowledge of scientific conventions and that facilitates the learning of the listeners or readers 7. Appropriate mathematical concepts and skills in interpreting data and solving problems 8. Rational and creative thinking processes of observing, communicating, comparing, organizing, relating, and inferring; solving problems; and making decisions 9. The relationship between science and society and the relationship of science to other areas of human endeavor; e.g., art, music, history, government, literature 10. The importance of basic facts and information in making career and consumer choices 11. Contributions made by men and women of various races and nationalities and from different career areas
Course Content	A. Living Things 1. Structure and processes 2. Cells and tissues 3. Genetics and reproduction 4. Natural selection and evolution 5. Effect of environmental change 6. Research and development of new products by artificial means B. Plants 1. Structure 2. Types (classification)

3. Growth and reproduction
4. Photosynthesis
5. Distribution of materials
6. Behavior and coordination
7. Agriculture: the human impact

C. Protists

1. Structures
2. Types (classification)
3. Growth and reproduction
4. Movement
5. Impact on humans

D. Animals

1. Structure and anatomy
2. Types (classification)
3. Growth and reproduction
4. Behavior and coordination
5. Movement
6. Human impact

E. Human Beings

1. Structure and anatomy
2. Reproduction
3. Heredity and growth
4. Behavior and coordination
5. Functions of the human body
6. Conditions for good health
7. Variations among humans
8. Population growth
9. Environmental and societal impact

F. Ecosystems

1. Populations and communities
2. Cooperation and competition
3. Interrelationships: food chains and food webs
4. Succession and balance
5. Cycle: carbon, nitrogen, water, various minerals
6. Controlled and changing ecosystems
7. Problems posed by human beings

Social Sciences

3 Years

Three years of education in the social sciences will help prepare students to be humane, rational, understanding, and participating citizens in a diverse society and an increasingly interdependent world. To achieve that goal, students need to acquire knowledge of and to develop an appreciation for the history of the United States, its government, its legal system, its basic institutions, its economic system, and the ideals and traditions that are the basis of democracy. Students need also to acquire knowledge of the physical, cultural, and economic geography of earth and to become conversant with the historical development and contemporary concerns of the major cultures in the Western and non-Western worlds.

Course Title and Level	World Civilizations: History, Geography, and Culture *Department:* Social Science *Length of Course:* One year *Available to Students:* Grades nine and ten *Required or Elective:* Required *Prerequisites:* None
Aims and Objectives	The course in World Civilizations: History, Geography, and Culture offers an in-depth study of selected civilizations chosen from the Western and non-Western worlds. Emphasis should be given to the study of European culture because of its significance to the intellectual, political, and social development of the United States. It is also important for students to study cultures other than European in order for them to perceive the world as an interdependent community made up of cultures that have similarities and differences. The course should provide students opportunities to compare and contrast Western and non-Western cultures in terms of philosophies, ethical systems, law, languages, literature, religions, and the arts. It should enable students to become knowledgeable about the historical events that have had an impact on the development of particular cultures and aware of the contributions of various people to our heritage.
Aims of the World Civilizations Course	The aims of the course in World Civilizations: History, Geography, and Culture are: • To recognize our country's connection to larger historical, geographic, and cultural structures • To appreciate that societies reflect the accumulated wisdom and contributions from many cultures

- To appreciate the history, commonalities, and diversity of world cultures; the reality of human interdependence; and the need for world cooperation

Objectives of the World Civilizations Course

The objectives of the course in World Civilizations follow, according to each of the three perspectives:

1. Historical Perspective—The student will demonstrate an understanding of:
   a. The major historical concepts that help explain the past in order to relate the past to the present and to the future in a study of continuity and change
   b. Information derived from primary and secondary sources
   c. Development of global interdependence
   d. Ever changing interrelationships among nations and peoples
   e. Critical events, trends, religions, philosophical movements, and technological advances that affected the course of history
2. Geographic Perspective—The student will demonstrate an understanding of:
   a. Maps and globes, map scales, map symbols, chart graphs, photographs, and map vocabulary
   b. Physical and cultural geographic characteristics of selected regions of the world
   c. The relationship between physical geography and human geography in terms of changing spatial distributions of people, their activities, and their interaction with the natural environment
   d. The interaction of culture and technology in the use and alteration of the physical environment

	3. Cultural Perspective—The student will demonstrate an understanding of: a. Basic social institutions (family, church, school, and so forth) that all cultures possess, though the characteristics of these institutions may differ and change over time b. Art forms and literary forms from various historical periods in selected cultures c. Contributions of significant men and women in the major cultures of the world d. The impact of a variety of world cultures on the United States and California e. Aspects of our diverse contemporary culture that have their origins in the great world civilizations of the past
Course Content	A. Suggested Cultures or Cultural Areas 1. In preparation for the study of the United States, emphasis should be given to a study of the European culture and its heritage from the classical civilizations 2. It is also important to study other cultures in depth. Selections may be made from the following: a. Asian Pacific (Korea, Philippines, and Polynesia) b. China c. Japan d. India e. The Middle East f. North, Central, and South America g. Sub-Saharan Africa h. USSR B. Suggested Topics Suitable for In-depth Studies of Cultures 1. Historical development and nation building 2. The land and the peoples

	3. Political and economic developments across time 4. Social and family life, traditional and modern 5. Language, literature, law, and education 6. Religion and ethics 7. Philosophies, ideologies, and values 8. The arts—visual, performing, and applied 9. Science, medicine, mathematics, and technology 10. Status and roles of women 11. Status and roles of nonmajority groups 12. Important men and women 13. Cultural perspectives 14. Cultural change and exchange
Course Title and Level	**The United States: Ideals, Institutions, and Traditions** *Department:* Social Science *Length of Course:* One year *Available to Students:* Grade eleven *Required or Elective:* Required *Prerequisites:* None
Aims and Objectives	The development of the ideals, traditions, and institutions that are unique to our heritage form the focus for this survey of the history of the United States. To understand the role of the United States in the world requires an historical study of how and why those ideals, traditions, and institutions have been formed and reformed. Such study contributes to the delineation of a realistic perspective on the nature of our society. It facilitates an understanding of what experiences and values we share with other peoples of other

times and places and in what respect we are different. It serves as the basic background for understanding the diverse nation in which the student is to become a responsible citizen.

Aims of The United States Course

The aims of the social sciences course, The United States: Ideals, Institutions, and Traditions, are:

- To recognize significant events, major works, key ideas, and key people in the history of the United States
- To recognize ourselves as Americans—who we are and how we came to be that way
- To appreciate and to develop a commitment to the ideals, institutions, and traditions of the United States

Objectives of The United States Course

The student will demonstrate an understanding of:

1. Significant events in the history of the United States
2. Major works, concepts, and principles expressed in historical documents that have shaped the development of the United States, such as the Declaration of Independence, the Constitution, and the Bill of Rights
3. Key ideas in the intellectual history of the United States that have shaped this nation
4. Contributions of key people and groups that have shaped the United States
5. Major characteristics and the development of the American political, governmental, and legal systems
6. Major characteristics and the development of the American economic system
7. Importance of geography, abundant resources, and the frontier to the growth of the United States

	8. Role of the United States and reasons for assumption of those roles in international affairs and the impact of world affairs on the United States 9. Contributions of ethnic, racial, religious, and other groups to the cultural diversity of the United States 10. The relationship between studying the ideals, institutions, and traditions of the United States and assuming the role of a citizen
Course Content	A. Some Suggested Topics for an In-depth Study of the United States 1. Genesis and evolution of American ideals, institutions, and traditions 2. Unity and diversity among the American people 3. Americans shaping and reshaping their environment 4. Forming and reforming American political, economic, and social institutions 5. Americans asserting their beliefs and values in action and expressing their beliefs and values through the arts 6. Viewing the American experience in a world context B. Suggested Documents and Works 1. Mayflower Compact 2. Declaration of Independence 3. Articles of Confederation 4. Constitution and the Bill of Rights 5. Federalist Papers 6. Critical addresses, Presidential messages, congressional messages, and statements of belief 7. Selected literary works

	C. Contributions by Outstanding Men and Women and Groups in the Development of the United States 1. Political, military, industrial, and labor leaders 2. Scientists, inventors, and social leaders 3. Leaders in religion, philosophy, and the law 4. Educators, artists, writers, architects, designers, athletes, and musicians
Course Title and Level	**Individual Rights and Civic Responsibilities** *Department:* Social Science *Length of Course:* One year, Part 1—Political, Legal, and Ethical Perspectives; Part 2—Economics *Available to Students:* Grade twelve *Required or Elective:* Required *Prerequisite:* The United States: Ideals, Institutions, and Traditions
Aims and Objectives	This course is designed for students who are maturing and preparing to graduate from high school and to assume additional responsibilities as citizens. The students taking this course will study the points of view and major concepts of political science and economics, gain an understanding of the legal system, and develop an appreciation for ethical considerations supported by the American society. Through the study students will learn several ways to solve problems, make decisions, and participate as an effective citizen of the United States.
Aims of the Social Science Course	The aims of the social science course, Individual Rights and Civic Responsibilities, are:

- To recognize the political principles, institutions, and processes that are supported by effective citizens in American society
- To recognize the skills needed to manage conflict and to participate in the decision-making process
- To appreciate and to develop a commitment to human dignity, justice, and democratic processes

Objectives of Part 1 of the Social Science Course

In the first part of this social science course, which covers political, legal, and ethical perspectives, the student will demonstrate an understanding of:

1. The rights and responsibilities of individuals in the United States
2. Basic principles of American government expressed or implied in the Declaration of Independence, the Constitution, court decisions, and laws
3. Major ideas and historical events from which the American political system has evolved
4. Organization, functions, and decision-making processes of the branches of government at local, state, and national levels
5. Comparisons of the Unites States' system of government with other systems
6. Electoral process at all levels and the role of political parties in that process
7. How actions that individuals and groups take influence the political process
8. Principles underlying law in a free society
9. Principles of ethical behavior
10. The importance of civil liberties and the protection of minority views

11. Values which promote desirable cohesive and unifying elements in a democratic political community: justice, truth, equality, authority, responsibility, participation, respect for persons and property, personal obligation for the public good
12. Values which promote desirable pluralistic and individualistic elements in a democratic political community: diversity, privacy, freedom, due process, human rights
13. Tension between individual rights and the public good
14. Ends and purposes of a society

Objectives of Part 2 of the Social Science Course

In the second part of the course, which covers economics, the student will demonstrate an understanding of:

1. The historical development and current operation of the market economy in the United States
2. Basic economic concepts and the vocabulary to express them
3. How unlimited wants and the scarcity of resources affect consumers, producers, and government
4. The development and operation of the government's monetary, taxation, and regulatory policies and the basic relationships between government and the economy in the United States
5. Economic specialization, exchange, and interdependence in the United States and throughout the world community
6. Differences and similarities among economic systems and contemporary economic issues and problems faced by all societies

	7. Historical development and contemporary roles of labor, agricultural, and business organizations 8. Impact of the economic system on persons of different backgrounds 9. Factors that have contributed to economic growth in the United States 10. Major contributions of outstanding economists, such as Adam Smith, John Keynes, and Milton Friedman
Course Content	A. Part 1—Political, Legal, and Ethical Perspectives 1. Development of the federal government a. Need for an organized government in society b. U.S. Constitution c. The Bill of Rights d. United States as a representative democracy e. United States as a federal system of government 2. Structure and function of the federal government a. Three branches of government b. Constitutional checks and balances of the three branches c. Flexibility of the Constitution through interpretation d. Place of law, the legal system, and the legal process e. Role of federal agencies and bureaus f. Major problems of cost, imbalance of powers, and increasing bureaucracy g. Provisions for individual access to the political system

3. Structure and function of state governments
   a. Organization, function, and derivation of powers
   b. Restructured relationship between the states and the federal government; and between the states and local governments
   c. California: A contemporary case study
   d. Individual initiative and access to the system
4. Structure and function of local governments
   a. Organization and function of city and county units
   b. Special districts and school districts
   c. Relationship to state and federal governments
   d. The civil and criminal justice system
   e. Continuing issues
   f. Recall, initiative, referendum, and individual access to local government units
   g. Role of volunteers
5. Decision making in government
   a. Setting goals and establishing priorities
   b. Development of legislation
   c. Individual access to decision-making process
   d. Process of budgeting and financing government in a democracy
   e. Process used to resolve societal problems
   f. Regulatory process of bureaucracy
6. Participation as a citizen
   a. Political behavior learned at home, at school, and in the community
   b. Characteristics of an individual who is politically aware
   c. Role and function of political parties

d. Selection and election of candidates for public office
e. Importance of mass media
f. The level and quality of response by government to the needs of its citizens
g. The responsibilities of global citizenship

7. Comparison of the United States as a constitutional democracy with selected major political systems

B. Part 2—Economics

1. Why it is important to study economics
   a. Individuals deal with a multitude of economic factors affecting their own personal lives.
   b. Decisions must be made by citizens on a variety of economic problems of local, state, national, and international significance.
2. A definition of economics addressing specific questions
   a. Need for an economic system
   b. Unlimited wants
   c. Productive resources: land/natural resources, labor/human resources, capital, entrepreneurship
   d. Scarcity
   e. Opportunity costs—personal and societal
   f. Trade-offs
3. Wide variation in economic systems
   a. Command
   b. Traditional
   c. Market
   d. Relationship of economic systems to political/social systems: capitalism, communism, socialism
   e. The changing nature of economic systems

4. The market system
   a. How a market system resolves basic economic questions
   b. Influence of markets on the use of resources
5. The modified market economy of the United States
   a. A private enterprise economy
   b. Forms of business organization: proprietorship, partnership, corporate ownership
   c. Critical importance of agriculture
   d. Monopoly
6. Influence of markets on the use of resources
   a. Supply, demand, market prices
   b. Effective decision making as a consumer and/or producer in markets
   c. Role of government: allocation of resources through taxing and spending
7. Labor markets
   a. Supply, demand, wages
   b. Types, purposes, and economic effects of labor organizations
   c. Forms of labor-management relations
   d. Effective decision making as a worker or employer in a market
8. Financial markets
   a. Saving, borrowing, and market interest rates
   b. Types, purposes, and economic effects of financial institutions
   c. Money, money creation, and the money multiplier
   d. Effective decision making as a borrower or lender in a financial market
9. The effect of government on markets
   a. National economic goals

	b. Price controls; subsidies c. Regulations, agencies, laws d. Taxes e. Extent: result of effective decision making by citizens in light of such goals as freedom, efficiency, scarcity, justice, stability, and growth 10. Income distribution a. Market determination of income: wages, collective bargaining, rent and interest, farm incomes b. Government policies c. Pension effects d. Intersection of various economic forces with the different component groups in the United States—women, minorities, senior citizens, the disabled 11. Economic growth and stability a. National economic goals b. Stabilization 12. Economics for the individual or the family a. Problems facing the consumer b. Consumer protection 13. Relationship of the United States to the international economic system a. International markets b. Comparative advantage c. Costs and benefits of specialization, exchange, and economic interdependence d. Exchange rates e. Balance of payments f. Multinational corporations g. Barriers to world trade h. Effective decision making as a citizen in the global economy i. Economics of developing nations j. Role of international law

Visual and Performing Arts

1 Year

Experience in the arts develops insights and abilities which enhance the quality of life. Because the arts are collectively one of the most important repositories of culture, their study is a principal means for understanding ourselves and others. Furthermore, the study of aesthetic qualities in artistic and natural forms and the opportunity for imaginative expression prepare students to participate in the cultural life of their communities. The arts enable students to approach other aspects of life and learning with increased knowledge, sensitivity, and understanding.

Visual and Performing Arts/Course Description

Course Title and Level	Visual and Performing Arts, Secondary ***Department:*** Fine Arts (dance, drama/theatre, music, visual art) ***Length of Course:*** One year of an integrated course (or one semester each) of any two of the following: dance, drama/theatre, music, or visual art ***Available to Students:*** Grades nine through twelve ***Required or Elective:*** Required unless the student, prior to entering high school, passed a course that the high school has certified as equivalent to its visual and performing arts course; or required unless the student has demonstrated proficiency in visual and performing arts by passing an appropriate test ***Prerequisites:*** None
Aims, Objectives and Course Content	The student will be able to demonstrate aesthetic perceptions that will stimulate imagination, divergent thinking, and creativity as well as impact all areas of learning. The student will have the opportunity for creative expression, which includes originating, creating, performing, and interpreting. The student will acquire a multicultural arts heritage and an understanding of the effect of the arts on society, past and present. Through study and experience, the student will be able to develop criteria for arriving at personal judgments about the arts.
Aims of the Visual and Performing Arts Course	The aims of the visual and performing arts course are: • To recognize the importance of the arts in our daily lives • To appreciate the "creativeness" in all of us • To be given opportunities to develop a sense of self-confidence and of self-worth

Objectives for Dance

Students will demonstrate an understanding of:

1. The communicative potential of body movement as performers and as members of an audience
2. Formal elements of dance and how they are organized to evoke responses
3. Skills and techniques to create, represent, and respond to ideas and feelings through movement
4. Theories and styles of dance within various historical and cultural contexts, identifying the variety of ways in which dance gives form to personal beliefs and social values
5. Dance works in relation to drama/theatre, literature, music, and visual art within similar historical and cultural circumstances
6. Criteria for making critical judgments about the form, content, technique, style, and purpose of dance works and performances

Course Content for Dance

A. Perception of Aesthetic Qualities
   1. Response to sensory stimuli, such as sight, sound, and touch
   2. Distinction between sensory, expressive, and technical properties in dance works

B. Formal Elements of Dance and Technical Aspects of Movement
   1. Cross-forms
      a. Space
      b. Time
      c. Energy/force/dynamics
   2. Choreography
      a. Theory
      b. Styles
      c. Techniques/vocabulary

C. Variety of Dance Forms in Individual, Ensemble, and Group Settings, Which May Include:
1. Warm-ups and aerobics
2. Modern
3. Ballet
4. Jazz
5. Folk-ethnic
6. Tap
7. Ballroom

D. Periods and Styles Within Various Historical and Cultural Contexts

E. Dance as an Art in Relationship to Other Art Forms
1. Drama/theatre
2. Music
3. Visual art

F. Viewing
1. Sharing observations
2. Recognizing what has been learned
3. Comparing dance works
4. Developing critical thinking

G. Appreciation
1. Enjoyment
2. Talking and writing about dance works
3. Integration into one's daily life

Objectives for Drama/Theatre

Students will demonstrate an understanding of:

1. The communicative potential of drama/theatre activities as performers and as members of an audience
2. Formal elements of drama/theatre and how they are organized to evoke responses
3. Skills and techniques to create, represent, and to communicate attitudes, emotions, information, and concepts through drama/theatre experiences

4. Drama/theatre, past and present, within various historical and cultural contexts, identifying the variety of ways in which drama/theatre adds to personal beliefs and social values
5. Drama/theatre works in relation to dance, literature, poetry, music, and visual art within similar historical and cultural circumstances
6. Criteria for making critical judgments about the form, content, technique, style, and purpose of drama/theatre productions

Course Content for Drama/Theatre

A. Perception of Aesthetic Qualities
   1. Response to sensory stimuli, such as sight, sound, and touch
   2. Distinction between sensory, expressive, and technical properties in drama/theatre works

B. Formal Elements and Technical Aspects of Drama/Theatre
   1. Skills needed to prepare a finished production
      a. Structure
      b. Form
      c. Style
      d. Unity
      e. Variety
      f. Rhythm
      g. Proportion
      h. Balance
      i. Emphasis
      j. Script
   2. Collaborative nature of theatre
      a. Performer
      b. Environment
      c. Audience

C. Variety of Drama/Theatre Experiences, Which May Include:
1. Acting
   a. Monologue
   b. Pantomime
   c. Ensemble scenes
2. Producing
   a. Scene design
   b. Costume
   c. Make-up
   d. Electronic devices; e.g., light, sound
   e. Writing
   f. Managing

D. Periods and Styles Within Various Historical and Cultural Contexts

E. Drama/Theatre as an Art in Relationship to Other Art Forms
1. Dance
2. Music
3. Visual art

F. Viewing
1. Sharing observations
2. Recognizing what has been learned
3. Comparing drama/theatre works
4. Developing critical thinking

G. Appreciation
1. Enjoyment
2. Talking and writing about drama/theatre works
3. Integration into one's daily life

Objectives for Music

Students will demonstrate an understanding of:

1. The communicative potential of musical experiences as performers and listeners
2. Formal elements of music and how they are organized to evoke responses

3. Skills and techniques to listen, read, and write music—vocal and instrumental
4. Literature, theory, and purposes of music in the various historical and cultural contexts and will identify the variety of ways in which music gives form to personal beliefs and social values
5. Musical works in relation to dance, drama/theatre, literature, poetry, and visual art made within similar historical and cultural circumstances
6. Criteria for making critical judgments about the form, content, technique, style, and purpose of musical compositions and performances

Course Content for Music

A. Musical Techniques and Skills, with an Understanding of the Principles Which Underlie Them
   1. Sound generation
   2. Notation

B. Formal Elements of Music and Technical Aspects of Listening to and Performing Musical Works
   1. Pitch
   2. Rhythm
   3. Harmony
   4. Form
   5. Texture
   6. Tempo
   7. Dynamics
   8. Timbre

C. Variety of Musical Forms, Which May Include:
   1. Voice
      a. Solo
      b. Choral
   2. Instrumental
      a. Orchestra
      b. Band

D. Periods and Styles Within Various Historical and Cultural Contexts

E. Music as an Art in Relationship to Other Art Forms
   1. Dance
   2. Drama/theatre
   3. Visual art

F. Viewing and Listening
   1. Sharing observations
   2. Recognizing what has been learned
   3. Comparing musical works
   4. Developing critical thinking

G. Appreciation
   1. Enjoyment
   2. Talking and writing about musical works
   3. Integration into one's daily life

Objectives for Visual Art

The student will demonstrate an understanding of:

1. The communicative potential of visual art as a nonverbal (universal) language
2. Visual qualities and how they are organized to evoke responses to works of art, nature, and the everyday environment
3. Skills to create, represent, and interpret ideas and feelings through art media while utilizing the language and structure of art
4. Artistic accomplishments within various historical and cultural contexts and will identify the variety of ways in which visual art gives form to personal beliefs and social values
5. Visual art works in relation to dance, drama/theatre, literature, poetry, and music within similar historical and cultural circumstances

	6. Criteria for making judgments about the form, content, technique, style, and purpose of varied works of visual art
Course Content for Visual Art	A. Perception of Aesthetic Qualities 1. Describing sensory characteristics 2. Distinguishing between sensory, formal, expressive, and technical properties in works of art 3. Observing differences between sign, symbol, and metaphor B. Formal Elements of Visual Art 1. Line 2. Form 3. Space 4. Color 5. Value 6. Texture 7. Pattern 8. Balance 9. Repetition 10. Variation 11. Rhythm C. Variety of Experiences with Art Media, Which May Include: 1. Drawing 2. Painting 3. Graphic arts 4. Photography 5. Electronic imagery 6. Environmental art 7. Architecture 8. Sculpture 9. Ceramics, fibre, glass 10. Landscape design

D. Periods and Styles Within Various Historical and Cultural Contexts

E. Visual Art in Relationship to Other Art Forms

1. Dance
2. Drama/theatre
3. Music

F. Viewing and listening

1. Sharing observations
2. Recognizing what has been learned
3. Comparing visual art works
4. Developing critical thinking

G. Appreciation

1. Enjoyment
2. Talking and writing about art works
3. Integration into one's daily life

Appendixes

A/History of the Development of the Model Graduation Requirements

B/Descriptions of Optional Courses

C/Acknowledgments

D/Selected List of State Department of Education Publications

Appendix A

History of the Development of the Model Graduation Requirements

January, 1980	State Board of Education held initial discussion on secondary curriculum.
August, 1980	Board formed 57-member task group on secondary schools.
October, 1980	Coalition for Intermediate and Secondary Education Improvement was formed, with representation from the following organizations and groups: American Association of University Women Association of California School Administrators Association of Urban School Districts California Association of Compensatory Education California Association of Large Suburban School Districts California Congress of Parents, Teachers, and Students, Inc. California Federation of Teachers California Round Table on Educational Opportunity California School Boards Association California State Board of Education California State Department of Education California Teachers Association League of Women Voters United Teachers of Los Angeles
August, 1982	Ann Leavenworth, President of the Board, appointed the members of the Committee on the Master Plan for Excellence in California Schools: Henry Alder, Chair Wendy Allyn (student member of the Board) Josie Bain Ann Leavenworth (NOTE: C. Hugh Friedman joined the committee as an ex officio member in January, 1983, when he became the new President of the Board.)

Appendix A

October, 1982	Survey form on current and projected high school graduation requirements was sent to all districts maintaining high schools.
November, 1982	Master Plan Committee met with the Curriculum Development and Supplemental Materials Commission to plan first draft of model graduation requirements.
December, 1982	Draft of model graduation requirements was accepted unanimously by the Board.
February—April, 1983	Public hearings on proposed model graduation requirements were held: Sacramento, February 9 Burbank, February 17 Redding, Feburary 24 Fresno, March 8 Los Angeles, March 5 San Francisco, March 17 Riverside, March 24 San Diego, March 25 Aptos, April 13 At least 25 additional meetings were held with interested groups and individuals. All material and testimony received at public hearings and meetings were analyzed, summarized, and presented to the Master Plan Committee.
April—May, 1983	Master Plan Committee met twice with Curriculum Commission to plan revisions of model graduation requirements. Revisions were completed.
June, 1983	Model graduation requirements were approved unanimously by the State Board of Education.

Appendix B
Descriptions of Optional Courses

Course Title and Level	Pre-Algebra, Secondary *Department:* Mathematics *Length of Course:* One year *Available to Students:* Grades nine through eleven *Required or Elective:* Elective *Prerequisites:* See "Prerequisites for Entry into High School Mathematics Sequences."
Aims and Objectives	The purpose of pre-algebra is to help students develop number sense and basic skills; thus, the emphasis should be on problem solving. Applications should be related to the world at work and provide opportunities for students to develop number sense and to work with whole numbers, decimals, percents, expressions and equations, integers, fractions, graphing, exponents, ratios and proportions, geometric measurement, and statistics.
Aims of Pre-Algebra	The aims of the course in pre-algebra are: • To empahsize algebraic concepts • To recognize the applications of mathematics to science and other areas • To appreciate the importance of mathematics to solving everyday problems
Objectives of Pre-Algebra	Students will demonstrate an understanding of: 1. Previous coursework in mathematics 2. Algebraic concepts 3. Problem-solving skills 4. Estimating and testing the accuracy of calculations 5. Applications of mathematical skills to "real world" situations

Appendix B

Course Content	A. Reinforcement of the basic skills needed as prerequisites for entry into high school mathematics sequences (see page 32) by applying them to realistic problems of interest to students B. Introduction of simple aspects of the beginning of Albegra I, specifically topics A through F from the course content of Algebra I C. Use of the calculator and the computer to expedite solutions after mastery of the basic algorithms has been demonstrated
Course Title and Level	Algebra II, Secondary *Department:* Mathematics *Length of Course:* One year *Available to Students:* Grades ten through twelve *Required or Elective:* Elective *Prerequisite:* Algebra I (pass)
Aims and Objectives	The purpose of algebra is to help students organize their thoughts and develop number sense to solve problems that will be encountered in everyday life and that will prepare them to continue in their studies in mathematics and the sciences. The students will be able to review and master the fundamentals of algebra, including linear equations, exponents, radicals, graphs, and complex numbers, which will assist with the solution of quadratic equations and systems of quadratic equations. The students will also be introduced to such topics as logarithms, the binomial theorem, arithmetic and geometric progressions, and the concept of a function. The students will be able to use calculators and computers in solving problems, and they will also learn how to make estimates and approximations in order to be able to determine whether solutions obtained are reasonable.
Aims of Algebra II	The aims of Algebra II are: • To emphasize algebraic and geometric concepts • To recognize applications of mathematics to science and other areas

	• To appreciate the importance of mathematics to solving everyday problems
Objectives of Algebra II	The student will demonstrate an understanding of: 1. Previous coursework in mathematics 2. Algebraic, geometric, and trigonometric concepts 3. Problem-solving skills 4. Estimating and testing the accuracy of calculations 5. Applications of mathematical skills to "real world" situations
Course Content	A. Simplification of Algebraic Expressions B. Fractional Exponents and Radicals C. Absolute Value and Inequalities D. Operations on Polynomials E. Quadratic Equations: Completion of the Square, Quadratic Formula, Properties of Roots F. Complex Numbers G. Quadratic Inequalities H. Graphing Linear and Quadratic Functions and Inequalities; Determination and Interpretation of Slopes I. Solutions of Equations with Rational Expressions J. Systems of Linear Equations with Two and Three Unknowns: Homogeneous, Dependent, and Inconsistent Systems K. Polynomial Equations L. Binomial Theorem M. Arithmetic and Geometric Sequences and Series N. Exponential and Logarithmic Functions and Equations O. The Function Concept, Including Compositions and Inverse Functions; Arithmetic Operations on Functions P. Solution of Word Problems, Including Estimation and Approximation

Appendix B

Course Title and Level	**Consumer Mathematics, Secondary** *Department:* Mathematics *Length of Course:* One year *Available to Students:* Grades ten through twelve *Required or Elective:* Elective *Prerequisite:* Algebra I (pass)
Aims and Objectives	This course presents life situations involving mathematics that the students may encounter as consumers or producers at high school age and beyond. The emphasis is on the development of number sense and the application of problem-solving techniques. The computational operations are stressed, and the use of calculators and computers should be encouraged where applicable.
Aims of Consumer Mathematics	The aims of the course in consumer mathematics are: • To emphasize algebraic and geometric concepts • To recognize applications of mathematics to science and other areas • To appreciate the importance of mathematics to solving everyday problems
Objectives of Consumer Mathematics	The student will demonstrate an understanding of: 1. Previous coursework in mathematics 2. Algebraic and geometric concepts 3. Problem-solving skills 4. Estimating and testing the accuracy of calculations 5. Applications of mathematical skills to "real world" situations
Course Content	A. Mathematical Problems, Involving: 1. Wages, salaries, dividends, interest, and other income 2. Taxes 3. Unit pricing and comparison shopping

	4. Simple and compound interest 5. Insurance and premiums 6. Financial services, personal and business a. Borrowing money b. Repayment of loans c. Installment buying d. Financial analysis and planning 7. House and automobile purchases 8. Financial implications of sporting events and other recreational activities 9. Simple personal and business budgeting and bookkeeping B. Statistics, Including: 1. Collection and organization of data; their presentation in tables and graphs 2. Measures of central tendency and dispersion 3. The normal distribution 4. Testing simple statistical hypotheses 5. Application to advertising to identify inconsistent or misleading claims
Course Title and Level	**Probability and Statistics, Secondary** ***Department:*** Mathematics ***Length of Course:*** One semester ***Available to Students:*** Grades eleven and twelve ***Required or Elective:*** Elective ***Prerequisites:*** Algebra I and Geometry (pass)
Aims and Objectives	The purpose of this course is to help students become knowledgeable about organizing, analyzing, and interpreting data. Applications are drawn from many facets of daily life: business, industry, government, and other disciplines in school. Interest and enthusiasm are fostered by applying the tools of probability and statistics to problems and experiments that are relevant to the students' experiences.

Appendix B

	The course will enable students to understand the nature of probability from an empirical viewpoint, leading to the development of theoretical probabilities based on methods of counting outcomes. The use of preprogrammed calculators and computers is encouraged in the calculation of mean values, variance, and other tedious computations which tend to be obstacles to learning the mathematical concepts. The students' understanding and appreciation of concepts necessary for making decisions from data are emphasized over mathematical development of formulas and theorems.
Aims of the Probability and Statistics Course	The aims of the probability and statistics course are: • To emphasize probabilistic and statistical concepts • To recognize the applications of mathematics to science and other areas • To develop an appreciation for the importance of probability and statistics to solving everyday problems
Objectives of the Probability and Statistics Course	The student will demonstrate an understanding of: 1. Previous coursework in mathematics 2. Probabilistic and statistical concepts 3. Problem-solving skills 4. Estimating and testing the accuracy of calculations 5. Applications of mathematical skills to "real world" situations
Course Content	A. Permutations B. Combinations C. Probability of a Simple Event D. Empirical Determination of Probability E. Inclusive and Exclusive Events F. Independent and Dependent Events G. Bayes' Theorem

	H. Frequency Distributions and Their Representations by Tables and Graphs I. Measures of Central Tendency (Mean, Median, and Mode) and Dispersion (Range, Variance, and Standard Deviation) J. The Binomial Distribution K. The Normal Distribution L. Intuitive Sense of Randomness M. Sampling Techniques N. Testing Simple Statistical Hypotheses O. Regression and Correlation, and the Significance of a Correlation Coefficient

Appendix C
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Staff to the Master Plan Committee

Sandi Adams, Secretary
Francie Alexander, Manager, Textbooks and Materials Evaluation and Development Division, State Department of Education
Ellis Bowman, Special Assistant to the State Board of Education

Subject Area Coordinators

Phil Daro, Director, Technology Education, California State Department of Education
Ruth Hadley, Chairperson, Mathematics Committee, California Curriculum Development and Supplemental Materials Commission; Teacher, Vandenberg Air Force Base
Donald Lundstrom, Chairperson, California Curriculum Development and Supplemental Materials Commission; Director of Curriculum and Staff Development, Pajaro Valley Unified School District
Lucy Quinby, Chairperson, English/Language Arts Committee, California Curriculum Development and Supplemental Materials Commission; Teacher, Eureka City School District
John Sanford, Chairperson, Social Sciences Committee, California Curriculum Development and Supplemental Materials Commission; Teacher, Acalanes Union High School District

Appendix C

Contributors

Jean Claugus, Past President, National Council for Social Studies; Sacramento
Charles Perotti, Principal, Milpitas High School, Milpitas Unified School District
Carol Stadum, Member, California State Mining and Geology Board; Teacher, Huntington Beach High School, Huntington Beach Union High School District

Department of Education Staff

Fred Dobb, Consultant, Foreign Languages
Joe Hoffmann, Consultant, Mathematics
Donovan Merck, Manager, Instructional Services
Richard P. Mesa, Chief Deputy Superintendent of Public Instruction
Louis Nash, former Consultant, Arts
George Nemetz, Consultant, English
Robert Ryan, Manager, Office of Regional Services; and former Consultant, Science
Deborah Weinberg, Executive Director, Foundation for Instruction and School Effectiveness

Support Staff

Alice Lavis
Vivian Linfor
Inez McBroom
Dorothy Sands
Twyla Steyer
Jackie Talle
Kathy Thrasher

The Board also acknowledges and appreciates the comments and recommendations made by the hundreds of California citizens, parents, students, and educators who submitted written material or participated in public hearings throughout the state.

Appendix D

Selected List of State Department of Education Publications

The following State Department of Education publications are available for use in planning district and school programs:

Curriculum Frameworks

English Language Framework for California Public Schools (1976)
Foreign Language Framework for California Public Schools (1980)
Health Instruction Framework for California Public Schools (1978)
History-Social Science Framework for California Public Schools (1981)
Mathematics Framework and 1980 Addendum for California Public Schools (1982)
Physical Education Framework for California Public Schools (1973)*
Reading Framework for California Public Schools (1980)
Science Framework for California Public Schools (1978)
Visual and Performing Arts Framework for California Public Schools (1982)

Curriculum Handbooks

American Indian Education Handbook (1982)
Handbook for Planning an Effective Mathematics Program (1982)
Handbook for Planning an Effective Reading Program (1979)
Handbook for Planning an Effective Writing Program (1983)
Independent Study: New Pathways to Knowledge Through Contract Learning (brochure) (1981)
Science Education for the 1980s (1982)
Standards for Evaluation of Instructional Materials with Respect to Social Content (1982)
Statement on Competencies in English and Mathematics Expected of Entering Freshmen (1982)

*A 1983 edition is in process.

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Curriculum Handbooks	
Health, Safety, and Drug Education	California Guide to Traffic Safety Education (1976) Criteria for Assessing Alcohol Education Programs (1976) Criteria for Evaluating the School Health Education Program (1977) Criteria for Evaluating the School Health Services Program (1982) Guidelines and Procedures for Meeting the Specialized Physical Health Care Needs of Students (1980)
Physical Education and Athletics	State Guidelines for School Athletic Programs (1978)
Testing, Evaluation, Proficiency	Handbook on Reporting and Using Test Results (1976) Student Achievement in California Schools: Annual Report, California Assessment Program (1982)
Vocational Education	Curriculum Design for Consumer Education, K—14 (1974) Curriculum Models for Consumer and Homemaking Education (1977)
	To obtain a complete list of publications and an order form, write or call Publications Sales, California State Department of Education, P.O. Box 271, Sacramento, CA 95802 (916-445-1260). Persons who wish to pick up Department of Education publications in Sacramento rather than ordering them by mail may purchase them at the cashier's window, Mezzanine, Downtown Plaza Building, 515 L Street.

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